Elevating Ocular Surface Diagnostics

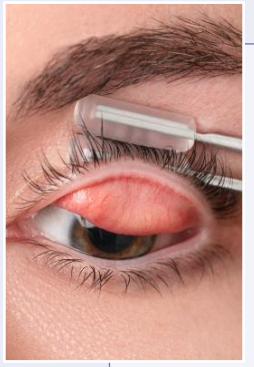
The Clinical Value of Upper & Lower Eyelid Evaluation

Based on: Why the Upper Eyelids Matter.
Cornea 44(1):p 128-135, January 2025

Upper Lid Eversion - Why It Matters

Upper eyelid eversion is a quick maneuver that materially changes diagnostic yield and patient management.

A 2025 ***Cornea*** review emphasizes that upper-lid eversion uncovers MGD, LWE, conjunctival disease, and systemic associations (eg, Sjögren's, SLE, RA).[1]



Clinicians who routinely evert lids report **fewer missed diagnoses** and **better targeting of therapy.**[2]

1. Gupta PK, Karpecki P. Comprehensive assessment of the meibomian glands by meibography: why the upper eyelids matter. Cornea. 2025;44(1):128-35 2. Kaur K, Stokkermans TJ. Meibomian Gland Disease. [Updated 2024 Mar 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK580474/.

Upper & Lower Lid Evaluation—Critical for Comprehensive Ocular Care

- Relying solely on lower lid imaging risks missing early signs of meibomian gland dysfunction (MGD).[1]
- Upper eyelids tend to show earlier morphologic changes such as tortuosity, dropout and gland thickening. [1]
- MGD changes especially seen in **contact lens wearers**, **post-cataract patients**, and those with systemic conditions like **Sjögren's syndrome** or **thyroid eye disease**. [1]

Image courtesy of Meivertor™

CLINICAL TAKE AWAY	Make upper lid imaging part of **standard of care** for dry eye disease and MGD evaluations.

1 Gupta, Preeya K. MD*,†; Karpecki, Paul OD‡,§. Comprehensive Assessment of the Meibomian Glands by Meibography: Why the Upper Eyelids Matter. Cornea 44(1):p 128-135, January 2025. | DOI: 10.1097/ICO.0000000000003729

Why evert the upper eyelid?

Key clinical value

- Reveals retained foreign bodies hidden beneath the tarsal conjunctiva
- Detects tarsal conjunctival pathology (giant papillary conjunctivitis, follicles, papillae, conjunctival scarring, trachoma)
- Assesses meibomian gland findings (orifice appearance, inspissation, telangiectasia, expressibility) that contribute to chronic irritation, burning, tearing or foreign-body sensation
- Identifies causes of persistent irritation, discharge, tearing or recurrent conjunctivitis
- Assists in post-trauma and post-operative assessment for occult injury or embedded material

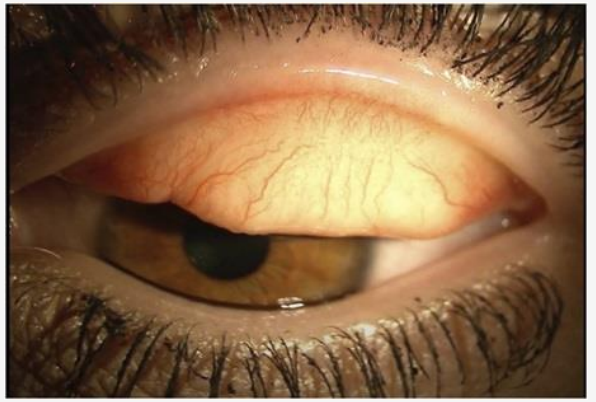
Impact on care

- Prevents missed diagnoses that can lead to infection, corneal abrasion/ulceration, or chronic symptoms
- Guides immediate management (removal, topical therapy, referral)
- Quick, low-cost maneuver with high diagnostic yield

Image courtesy of Meivertor™

Meibography: Improving Accuracy, Ease and Practicality

- Meibography offers various advantages and limitations, requiring clinicians to **balance accuracy, cost**, and **practicality** when selecting an imaging approach.[1,2]
- Proper eyelid eversion is crucial for ensuring image quality and accurate assessment (Fig. 1), especially for long-term monitoring.
    - Several factors can influence meibography outcomes, including **illumination**, **head positioning**, **eye gaze**, and **imaging of the upper or lower eyelids**.
        - New tools, including Meivertor, a single-hand eyelid eversion tool, can improve ease and accuracy and allow technicians to support doctors in successful acquisition of upper lid evaluations.



Proper upper eyelid eversion technique. Image from Dr P. Karpeck

Image courtesy of Meivertor™

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Upper Lid Eversion - Meibomian gland disease

The main goal of eversion is to **evaluate the palpebral conjunctiva and upper meibomian glands**. Historically many practices focused on lower glands only; emerging evidence shows the upper glands are equally — often more — informative.[1,2]

Findings to look for: **gland dropout**, **tortuosity**, **plugging**, and **poor meibum**. These features correlate with dry eye severity and contact lens intolerance.

Practical tip: Obtain meibography of the upper lid. Document baseline for follow-up (especially before/after cataract surgery or when fitting contact lenses).

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Upper Lid Eversion – Contact lens

Contact lens fittings and systemic screening

Prior to fitting for contact lenses - everting the upper eyelid provides an indication of the health of the palpebral conjunctiva.

Screen contact lens patients for upper-lid MGD — worsening upper lid gland changes predict higher rates of CL dissatisfaction and dropout.

Upper Lid Eversion – Lid wiper epitheliopathy

Avoid iatrogenic staining

Lid Wiper Epitheliopathy (LWE) appears as vital dye staining along the lid margin and indicates friction-related damage. It’s commonly associated with dry eye symptoms.

Look for LWE in symptomatic patients and CL wearers; treat underlying surface disease and consider lens/material changes.

Clinical Pearl	Use Meivertor, single-hand eyelid eversion tool to avoid iatrogenic staining

Upper Lid Eversion – Conjunctival pathology

Single-hand eversion leaves one hand free

Eversion uncovers **foreign bodies**, **concretions**, **giant papillary conjunctivitis**, and **palpebral inflammation** that are easily missed without inspection of the palpebral conjunctiva.

In contact lens-related discomfort, everting the lid often reveals papillae that **guide management** (eg, stop CL wear, change lens type, treat inflammation).

Clinical Pearl	Use Meivertor, single-hand eyelid eversion tool to leave one hand free to clinical procedures

Upper Lid Eversion — Critical for Comprehensive Ocular Care

Clinical call to action: Incorporate simple upper-lid eversion into every exam; document with photos/meibography and treat or refer as indicated

Routine eversion of the upper eyelid detects meibomian gland disease, lid-wiper epitheliopathy, conjunctival pathology, and systemic disease links that are otherwise often missed.

- **Evert the upper lid on every patient** — "so important that we perform it on every patient." (Brujic, Kading)
- **Meibomian gland assessment:** inspect palpebral conjunctiva and obtain upper-lid meibography when possible — upper glands provide essential diagnostic/prognostic data for MGD and dry eye.
- **Contact lens relevance:** upper-lid MGD (tortuosity, plugging, poor meibum) correlates with CL discomfort and dropout; screen pre- and post-op.
- **Lid wiper epitheliopathy (LWE):** use vital dyes to reveal lid margin staining from friction — common in symptomatic CL and non-CL wearers.
- **Conjunctival issues:** detect foreign bodies, concretions, giant papillary conjunctivitis, and inflammatory signs missed without eversion.

Gupta PK, Karpecki P. Cornea, 2025; plus clinical commentary from Brujic & Kading (from where?)

Meivertor: Technician-friendly tool for lid eversion

- Given that technicians commonly perform meibography during the patient workup, the innovations in eyelid eversion technology are also viewed as technician tools that assist in **consistently and effectively capturing images of the meibomian glands**.[1,2]
- Instructional videos provided by the manufacturers of eyelid eversion technologies highlight the tools' ease of use to **improve workflow efficiency**.
- In a 2025 article published in *Review of Optometry*, Dr. Karpecki explains, **"Meivertor's intuitive design simplifies meibography, allowing practitioners to focus on patient care without concerns about workflow disruption and delays."**[1]

Examiner everting the upper eyelid of a patient using the Meivertor. Image courtesy of Meivertor

Everting the lid with a device such as the Meivertor can provide a clear view of the structures for assessment.
Image courtesy of Meivertor

1. Karpecki PM. Things are looking up. Review of Optometry. May 15, 2025..
2. Karpecki PM. Right tool for the job. Review of Optometry. February 15, 2023.

Advancements in Instrumentation for Clinicians and Technicians

- Although **traditional lid eversion presents certain challenges**, **advancements in instrumentation**, such as the Meivertor have improved the efficiency and accessibility of this important procedure.
    - Regarding innovation, Dr. Karpecki says, “Gone are the days of having difficulty everting an eyelid or missing a subtle foreign body.”[1]
- The Meivertor was introduced as a specialized, stainless-steel tool designed for both upper and lower lid eversion.[2] Its innovative design allows for quick, single-handed eversion to free the other hand.[2] In addition, the Meivertor includes single-use, disposable silicone tips for hygiene and gentle grasping of the eyelashes for patient comfort.[2]

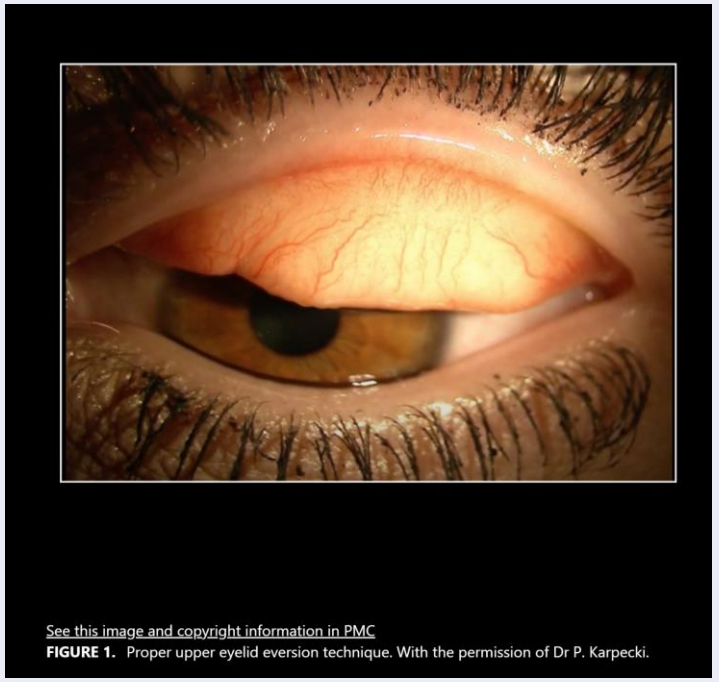

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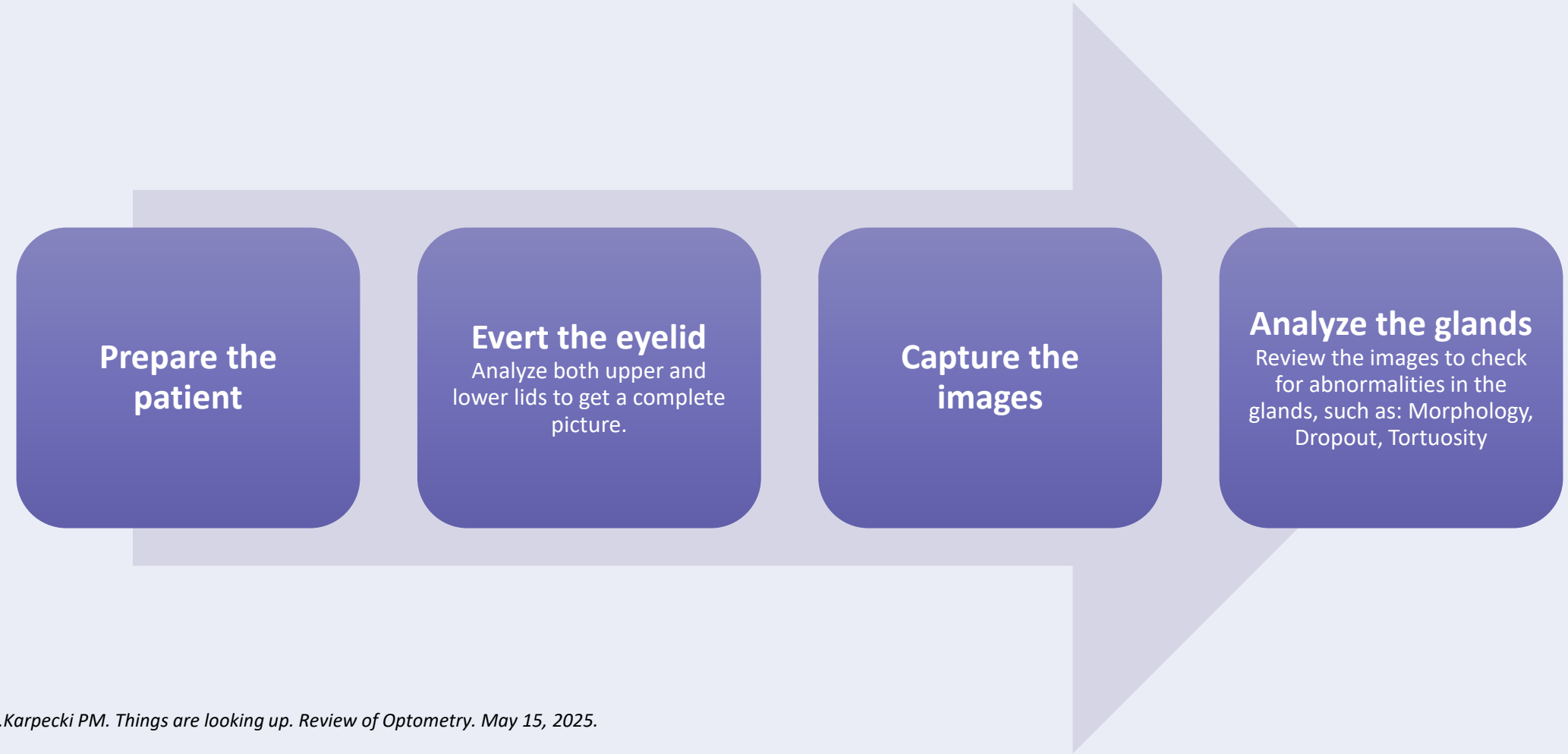
FIGURE 1. Proper upper eyelid eversion technique. With the permission of Dr P. Karpecki.

Product images courtesy of Meivertor

1. Karpecki PM. Right tool for the job. Review of Optometry. February 15, 2023. Accessed September 16, 2025. https://www.reviewofoptometry.com/article/right-tool-for-the-job
2. Meivertor. Meivertor.com. Accessed September 16, 2025.

How to evert (practical pearls/precautions)

Since the upper eyelid is more difficult to evert than the lower one, the process requires proper technique. Newer devices, like the **Meivertor™ Eversion** tool, have made consistent imaging easier.[1]



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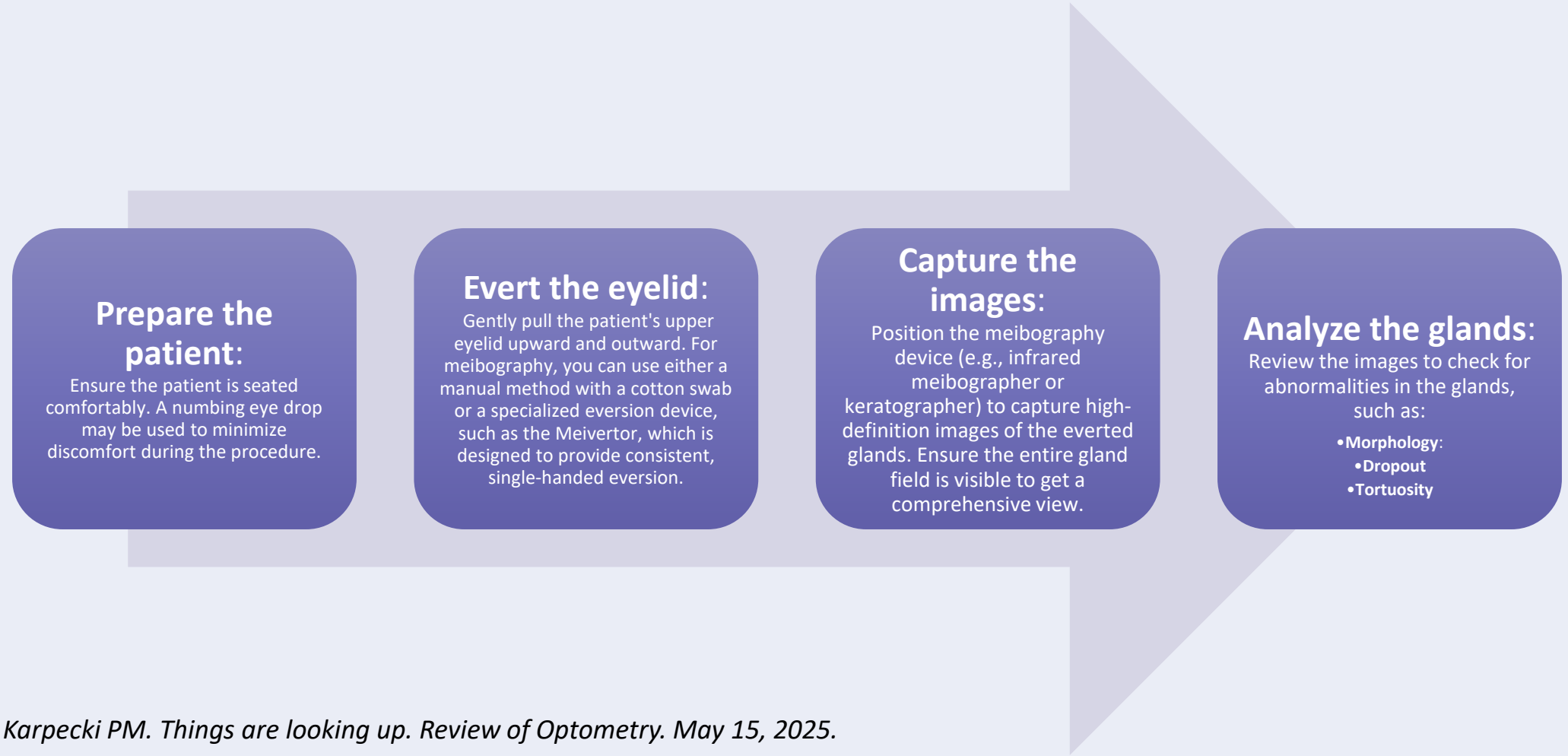

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